

## Section 2 – Data collection

Data is any kind of information that, once analysed, can help you to answer your research questions and either prove or disprove your hypotheses. The **Data Collection** section of your Independent Investigation is the point where you describe and explain the methods you plan to use, or those you have used, in order to get hold of your data.

Earlier planning stages of your investigation should have given you a clear idea of what data you actually need to collect and by having discussions with your teacher you will be able to gain advice about where and when you will be able to collect this data. You may even be able to borrow some field equipment from your school to help you collect the data. It is important to remember that there is no definitive set of rules about how you should collect your data – each investigation is individual and so the circumstances of one method may work well for one person and their investigation but may not be suitable for another at a different time or location.

Think inventively about how you might gain data. If the data you require involves, for example, measuring the frequency of something then it may be enough to simply count and record the phenomenon passively. If, however, you are looking to see how people feel about a certain idea, you could see whether they respond positively or negatively to different statements or ask them to come up with three words to describe the idea: inventive data collection techniques that really target the type of data needed for the investigation will certainly create more interest for the reader and marker of your study. In order to produce a good range of data presentation techniques you may need to ensure that your data collection methods produce data that can then be used numerically, graphically and cartographically.

It is also important to make sure that the data collection method you choose allows you to do something meaningful with the data it provides. Good ideas for studies can sometimes produce meaningless results, not because the research questions were flawed, but because the manner in which the data was collected only allowed for certain conclusions to be made.

Research Question:

2. What have been the primary reasons for EU migration to Lincolnshire?

Data Collection method for this Research Question:

Ask farm workers as part of an interview what their primary reason for moving to Lincolnshire was.



If you ask one hundred farm workers this question you may end up with one hundred different answers and no way of bringing their responses together to conclude anything meaningful.



Instead before you interview the farm workers, maybe come up with six to eight possible answers for the respondents to choose from, as well as an 'Other' category where they can create their own response if none of your answers 'fit' their ideas. This way you can turn their responses into numerical data, showing which answer gained the highest number of positive replies.

Research Question:

2. The highest levels of pollution will be found in areas that have the median levels of socio-economic status.

Data Collection method for this Research Question:

Sample the river water in the River Chelmer in Chelmsford and use it to test the acidity and level of phosphorous.



This data collection technique will only tell you about the water quality at that particular point on that particular day and very few conclusions can meaningfully be drawn from just this data.



A variety of samples should be taken at each site, at different times of the day and at slightly different points. This way you can find the mean, median or mode of the samples during the Data Analysis stage. Doing so will allow more accurate conclusions to be drawn and any conclusion made will stand up to greater scrutiny as they are based on more than one piece of data.

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The **Data Collection** section of your investigation can either be written before you go into the field (in the future tense) or after you return (in the past tense). The latter of these may be slightly easier to do if you have never visited the data collection site prior to when you collect your data. For example, this may be the case if you are visiting the site on a school organised field trip and are leaving some of the precise details of the data collection methodology to be decided once you have seen the site.

It may be useful to use the **'6W' questions** as a framework in the write-up of your Data Collection section. A key indication of a well-written Data Collection section is if someone who does not know anything about your topic or the locality of the data collection site is able to go out and recreate exactly the methods you used. Think of your data collection methods as an instruction manual that may enable another student to repeat your fieldwork at a later date. Writing in a '6W' framework may go some way to ensuring that you have all the relevant details covered. Not all of the questions listed below may be answerable due to the particular type of research you are carrying out but most of these questions are likely to require answering by most researchers. You may also wish to use your research questions as a way of structuring your Data Collection write-up: citing the data needed to answer each research question and then describing and explaining the method you have used to collect that data. You should certainly **refer back to your research questions** when you think about why you chose to carry out the data collection in a particular way: it is important that the reader of your study can see that you are keeping the research questions at the centre of everything you do.



Using **GIS** may be a useful way of both recording data in the field and ensuring it is easier to process once back in the classroom. If any part of your data collection has a geospatial element (i.e. the data is recorded in different places) then location information should be recorded. This spatial data, once entered into a spreadsheet will allow you to map any results you produce.

Depending on the type of data you are collecting you may have to carefully consider how you might manage any **ethical or social issues** that may arise. Names and addresses, for example, may have to be kept anonymous and you may have to behave sensitively to personal opinions on social challenges and what information people might be prepared or willing to share with you (remember they are not obliged to answer your questions). In a natural environment, think about the measures you will take to minimise your own negative impact on the area and whether the act of you collecting data actually causes harm to the environment you are in. Whilst it is very difficult to plan for every eventuality, describing in your write-up how you best tried to manage difficult circumstances will show how well you planned your methodology.

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No set of data collection methods is flawless and an acknowledgement of this in your Data Collection write-up puts you in a good position with the reader of your study. Briefly highlighting the **limitations** of your methods is very good practice at this stage.

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### Common Pitfalls:

- **Putting off writing up your Data Collection section once you return from the field site.** You will be surprised how easily key details that you thought you would remember are forgotten once you return to the classroom. Avoid this by making notes in the field on everything you consider important. Then write up your Data Collection, even just in skeleton form, as soon as you can once you get back.
- **Badly organised or illegible field notes.** If you cannot read the raw data once you are back in the classroom, it has little value for your study. If environmental conditions were against you on the day of your data collection and your notes look weather beaten, smarten them up at the first opportunity.
- **A lack of detail in the write-up of your methods.** The person reading your study was most likely not with you when you collected the data, so do not assume they will automatically know what you are talking about when you skip over certain details.
- **Using vague justifications for your chosen methodologies.** It is not acceptable to say that the reason you chose a particular data collection method was because 'it was easier'. At least describe why this method made things easier, or better still, really think about how that method improves either the quality or quantity of the data.
- **Using a method that closes the scope of the study.** If you only collect data at 'location A' then you can only comment on what is happening at 'location A'. However, if you collect data at a number of points you may be able to show how something changes over a distance or how other factors may be involved, placing you in a position to make higher level conclusions.

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### Other information

See the relevant specification for further guidance on lone and group working during Data Collection

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### External Links

Guidance on lone and group working during Data Collection

AQA – see page 26 [<http://www.aqa.org.uk/subjects/geography/as-and-a-level/geography-7037>]

Edexcel – see page 71 [<http://qualifications.pearson.com/en/qualifications/edexcel-a-levels/geography-2016.html>]

Eduqas – see page 62 [[http://www.eduqas.co.uk/qualifications/geography/as-a-level/WJEC-Eduqas-A-level-Geography-Specification.pdf?language\\_id=1&dotcache=no&dotcache=refresh](http://www.eduqas.co.uk/qualifications/geography/as-a-level/WJEC-Eduqas-A-level-Geography-Specification.pdf?language_id=1&dotcache=no&dotcache=refresh)]

OCR – see page 54 [<http://www.ocr.org.uk/qualifications/as-a-level-gce-geography-h081-h481-from-2016/>]

WJEC – see page 69 [[http://www.wjec.co.uk/qualifications/geography/r-geography-gce-asa-from-2016/wjec-gce-geography-spec-from-2016-e.pdf?language\\_id=1](http://www.wjec.co.uk/qualifications/geography/r-geography-gce-asa-from-2016/wjec-gce-geography-spec-from-2016-e.pdf?language_id=1)]